

**ISCI 2001**  
**Review Questions (Due December 4)**  
**Chapters 25-28**

**Weather, Environmental Geology, and Astronomy**

1. What is the difference between weather and climate?
2. What are the six elements of weather?
3. What does the angle that sunlight impacts the earth have to do with temperatures and the seasons?
4. Explain how seasons occur.
5. How does atmospheric pressure change with altitude?
6. Which of the Earth's atmospheric layers contain clouds and weather phenomena?
7. What is ozone? What is the "ozone layer" and where is it located? Why are we concerned about it?
8. What is the underlying cause of the wind?
9. Compare and contrast local to prevailing winds.
10. As the air temperature changes, what happens to the relative humidity? Explain.
11. Explain the origin of clouds.
12. What is the Richter Scale used for?
13. Where do most earthquakes occur?
14. What causes a tsunami?
15. What are the three major kinds of volcanoes?
16. Which types of volcanoes erupt quietly? Which erupt explosively? Why?
17. What are the hazards associated with volcanoes?
18. What is the source of a hurricane's energy?
19. Where do hurricanes form? How do they travel?
20. What are the major eras of geologic time (p.801)?
21. What is albedo?
22. Explain why melting ice caps can cause Earth's temperature to rise. (Hint: think about the change in albedo.)
23. What astronomical changes produce climate change on Earth? What idea or theory is this related to?
24. How does the increased emissions of  $CO_2$  gas from human activities relate to Global Warming?
25. What is it about the Industrial Era that has apparently caused the average global temperature to rise?
26. Describe the orbital motions of the planets in terms of their direction of revolution, rotation and the plane of their orbit.
27. Describe the Solar Nebula Theory. How does it account for the observations cited in #26 above?
28. How are the outer planets different from the inner planets? How does the Solar Nebula Theory account for this fact?
29. How old is our solar system?
30. Give a brief description of each of the inner planets and their moons.
31. Give a brief description of each of the outer planets and their moons.
32. What is the geometric relationship between the Earth, Sun and Moon during a) new moon, b) full moon, c) first quarter moon, d) last quarter moon?
33. Describe what happens during a) a Solar Eclipse; b) a Lunar Eclipse.

34. Why don't eclipses occur monthly, or nearly monthly?
35. What are two differences between asteroids and comets?
36. What produces a meteor shower?
37. What are constellations?
38. What are the constellations of the Zodiac? Why are these constellations different from the others?
39. What is a light year? Is a light year a time or distance measurement?
40. What does a star's color tell us about it?
41. What is an H-R diagram? What does it tell us about stars? Where does our own Sun fit on the diagram?
42. What are the outward and inward forces acting on a star?
43. Which stars last longer - high-mass or low-mass stars?
44. What is a black hole? How does it form?
45. What type of galaxy is the Milky Way?
46. How do Doppler shifts support the idea of an expanding universe?
47. How old is the Universe? What evidence is there for a Big Bang origin for it?
48. What is dark matter? What is dark energy? How do these relate to the future of the Universe?